

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for limiting and ~~for~~ monitoring the use of a data communications connection subject to payment, ~~between at least two IP clients in a packet-switched connection network (15), in through which~~ between at least two IP clients in a packet-switched connection network (15), in through which ~~a mutual data communications connection is set (105-106) between the at least two clients, the at least two clients including a client to be billed, the method comprising: (11-12), through a connection network (15),~~

setting a signalling connection between a connection-formation system in the connection network and at least the client to be billed, the signalling connection being separate routed differently (13) from the mutual data communications connection; is set (101-102) at least to the client to be billed,

setting a traffic limiter (16), in the connection network for the mutual data communications connection based on at least one of the header-field properties, such as the network addresses and/or the port addresses, of the packets being transmitted; is set (103) for the mutual data communications connection,

monitoring the data communications connection are monitored (104) and billed for (108), at least one individually for a session which is actively being transmitted (109) over the mutual data communications connection between the at least two clients, the data communications connection being monitored for data communications services being provided to the client to be billed; and is individuated, and the monitored

controlling the billing to be charged in a billing system session-specifically for the data communications connection based on the monitored data communications services; is controlled (110) and/or the monitored billing is defined session-specifically in the billing system (14), characterized in that

receiving a message is received (107) at the connection-formation system from the signalling connection concerning the interruption or termination of the session being transmitted over the mutual data communications connection; and/or state data (304) is received from the billing system, over the message connection, concerning an absence in the billing system or a deficiency in the billing system of the payment required for providing the session being

~~transmitted over the mutual data communications connection;~~

~~-in response to the message concerning the interruption or termination (107) of the session, and/or to the state data (304) received from the billing system, instructing the at least one traffic limiter is instructed (212, 305) to break, interrupt, or close the session over the mutual data communications connection;~~ and

~~-setting a two-way signalling link is set (302) between the connection-formation system (13) and the billing system, through the a mediator (14).~~

2. (Currently Amended) A method according to Claim 1, characterized in that
wherein:

~~_____ sessions are monitored and billed for using the connection-formation system (13) by - either receiving a message from the client (11) concerning the termination or interruption of a mutual session or other data communications connection, and - or else in response to a message sent from the billing system (14) concerning the lack or deficiency of a payment allocated to the session;~~

~~_____ in response to the message, the connection-formation system (13) is used to: _____ direct a message to the billing system (14) to limit the session-specific billing, and - further in response to the message, the connection formation system (13) is used to _____ instruct at least one the traffic limiter to close or interrupt at least one the session or other the mutual data communication connection through the connection network between the at least two clients, one first client (11) and at least one second client (12).~~

3. (Currently Amended) A method according to ~~either~~ Claim 1 ~~or 2~~, characterized in that further comprising:

~~_____ using the connection-formation system (13) is used to receive an initiation message for a data-communications-based service involving at least one first client (11) and at least one second client, (12) and to forward it the initial message to the billing system (14).~~

4. (Currently Amended) A method according to Claim 1, wherein ~~any of Claims 1—3,~~
~~characterized in that~~

- _____ a message confirming the payment required for the use of a data-communications-based service is received from the direction of the billing system ~~(14)~~, and
- _____ in response to the message confirming the payment, ~~the~~ an operator's traffic-relaying system ~~(15)~~ is instructed to perform at least one of:

_____ ~~cause—command—~~ the formation of a mutual data communications connection between the at least one first (11) and one second client (12), and ~~for~~

_____ ~~set—command—the~~ properties of the mutual data communications connection to be those which are required by a data-communications-based service, or are to be advantageous in terms of the data-communications service.

5. (Currently Amended) A method according to ~~any of Claims—~~ Claim 1, wherein ~~—4,~~
~~characterized in that~~ the connection-formation system (13) ~~is set to open and/or close data communications connections and/or sessions between the clients (11 and 12), using~~ performs operations according to the MIDCOM protocol for at least one of:

- _____ opening or closing the data communications connection, and
- _____ opening or closing the session between the at least two clients.

6. (Currently Amended) A method according to ~~any of Claims—~~ Claim 1, wherein ~~—5,~~
~~characterized in that~~ the interface of the connection-formation system includes an interface (13) ~~is set for a SIP server in the direction of the traffic~~ limiter—control system (15).

7. (Currently Amended) A method according to ~~any of Claims—~~ Claim 1, wherein the ~~—6,~~
~~characterized in that~~ at least two clients includes a one-client, which is addressed to ~~the~~ an address-search system being used, ~~in set for the data communications connection.~~

8. (Currently Amended) A method according to ~~any of Claims 1—~~Claim 7, ~~characterized in that~~ wherein a SIP system (13) is used as the address-search system.

9. (Currently Amended) A method according to Claim 7, wherein ~~any of Claims 1—8,~~ ~~characterized in that~~ the connection-formation system (13) is set to ~~form—establish~~ data communications connections ~~to—between~~ the at least two clients, using the address-search system.

10. (Currently Amended) A method according to ~~any of Claims—~~Claim 1, wherein ~~—9,~~ ~~characterized in that~~ the billing system (14) is set to initiate the provision of instructions to a ~~provide initiations to instruct the~~ traffic-relaying system of the connection network (15) to interrupt or terminate a session between the at least two clients (11—12).

11. (Currently Amended) A method according to Claim 24 wherein ~~a any of Claims 1—10,~~ ~~characterized in that~~ the traffic-relaying system of the connection network (15) is instructed to interrupt or terminate the at least one session or data communications connection between the at least two clients (11—12), in response to the state data indicating of the billing system (14) ~~directed to the session or data communications connection~~, which indicates an insufficient payment in the billing system (14) for continuing the session or data communications connection.

12. (Currently Amended) ~~Means—~~A system for limiting the use of a data communications connection subject to payment between IP clients in a packet-switched connection network, comprising: which means include

_____ a device configured as a connection-formation system —means for setting a mutual data communications connection between at least two clients, through the connection network, and —
means for setting a mutual signalling connection separate from, routed differently to the mutual data communications connection;

_____ a device configured as a mediator —means for monitoring the data communications

connection individually for a session which is actively being transmitted over the data communications connection for data communications services provided to the clients, and controlling billing for the data communications connection to be charged session-specifically based on the monitored data communications services; ~~connections, means for setting~~

~~_____ a device configured as a traffic limiter based on the properties, such as the network addresses, of the header fields of the packets being transmitted and/or possibly also on the ports of the traffic limiter, for the mutual data communications connection,~~

~~_____ a traffic relaying system including a network means for transmitting at least one session over the mutual data communications connection; means for individuating a session, and means for controlling the monitored billing to be charged session specifically for a data communications connection, and/or means for defining the session specifically monitored billing in the billing system;~~

characterized in that the means include

_____ wherein the connection-formation system is configured to:

~~_____ receive means for receiving a message over the mutual data communications connection from the mutual signalling connection concerning the interruption or termination of a transmitted the session being transmitted over the mutual data communications connection, and/or for receiving state data over the mutual data communications connection from the message connection of the billing system, concerning the lack or deficiency in the billing system of the payment required for the provision of the session being transmitted over the mutual data communications connection;~~

~~_____ instruct the means for instructing at least one traffic limiter to break or interrupt a session over the mutual data communications connection, in response to a the message concerning the interruption or termination of the session, or to state data received from the billing system; and~~

~~_____ set means for setting a two-way signalling link between the connection-formation system (13) and the a billing system, through the mediator (14).~~

13. (Currently Amended) A method-system according to Claim 12, wherein characterized in

~~that the connection-formation system is configured to: (13) includes means~~

~~_____ receive -for receiving- a message from a client (11) terminating or interrupting a mutual session or other data communications connection, and/or~~

~~-for receiving a message sent from the billing system (14) in response to the insufficiency or smallness of a payment directed to the session,~~

~~_____ direct -means for directing- a message, -for limiting session-specific billing, -to the billing system (14) over the connection-formation system (13) to the billing system (14), -in response to a -the received message, and~~

~~_____ instruct the -means for instructing- at least one traffic limiter to close or interrupt at least one the session or other mutual data communications connection through the connection network between the at least two clients one first client (11) and at least one second client (12), using the connection-formation system (13), also in response to a -the received message.~~

14. (Currently Amended) A system Means—according to ~~either~~ Claim 12, ~~wherein or 13,~~ **characterized** in that they include means for receiving, over the connection-formation system is configured to receive (13), an initiation message for a data-communications-based service concerning the at least two clients, one first client (11) and one second client (12), and forward the initiation message for forwarding it to the billing system (14).

15. (Currently Amended) A system Means—according to ~~any of Claims~~ Claim 12, wherein the connection-formation system is configured to: ~~14,~~ **characterized** in that they include:

~~_____ receive -means for receiving, from the direction of the billing system (14), a message confirming the payment required for the use of the data-communications-based service, and~~

~~_____ instruct -means for instructing- the traffic-relaying system (15), in response to the message confirming the payment,~~

~~_____ cause -to command- the formation of a mutual data communications connection between the of at least two clients, one first (11) and one second client (12), and /or~~

~~_____ set -to command- the properties of the mutual data communications connection to be those which are required by the data-communications-based service, or are to be advantageous in~~

terms of the data-communications-based service.

16. (Currently Amended) A system Means according to ~~any of Claims~~ Claim 12, wherein the connection-formation system uses ~~— 15, characterized in that they include means for opening and/or closing data communications connections and/or sessions between the clients (11 and 12), by means of operations according to the MIDCOM protocol for at least one of:~~

opening or closing the data communications connection, and

opening or closing the session between the at least two clients.

17. (Currently Amended) A system Means according to ~~any of Claims~~ Claim 12, wherein ~~— 16, characterized in that they include means for setting the interface of the connection-formation system includes an interface set for a SIP server (13), in the direction of the at least one traffic limiter-control system (15), for a SIP server.~~

18. (Currently Amended) A system Means according to ~~any of Claims~~ Claim 12, wherein the at least two clients includes ~~— 17, characterized in that they include means for setting a client, addressed to an address-search system used by at least one client, to the data communications connection.~~

19. (Currently Amended) A system Means according to Claim ~~any of Claims 12—18, wherein~~ characterized ~~in that the address-search system being used is a SIP system (13).~~

20. (Currently Amended) A system Means according to Claim 18, wherein ~~any of Claims 12—19, characterized in that they include means, using the address-search system is used, for setting the connection-formation system to form establish data communications connections to between the at least two clients.~~

21. (Currently Amended) A system Means according to ~~any of Claims~~ Claim 12, wherein the connection-formation system is configured to set ~~— 20, characterized in that they include means~~

~~for setting the billing system (14) to initiate the provision of instructions to provide stimuli to instruct the traffic-relaying system (15) to interrupt or terminate the a-session between the at least two clients (11-12).~~

22. (Currently Amended) A system Means-according to Claim 26, wherein the connection-formation system is configured to instruct any of Claims 12-21, characterized in that they include means for instructing the traffic-relaying system (15) to interrupt or terminate the at least one-session or data communication connection between the at least two clients (11-12), in response to a-the state data indicating of the billing system (14) directed to the session or data communications connection, which indicates an insufficient payment in the billing system (14) for continuing the session or data communications connection.

23. (Currently Amended) A computer program stored on a computer-readable storage medium, the program comprising instructions to be executed by one or more computers to perform the combination of steps recited in claim 1 or 24. software product for limiting the use of a data communications connection subject to payment between IP clients in a packet-switch connection network, characterized in that it includes means according to any of Claims 12-22, which are computer-readable software means.

24. (New) A method for limiting and monitoring the use of a data communications connection subject to payment between at least two IP clients in a packet-switched connection network through which a mutual data communications connection is set between the at least two clients, the method comprising:

setting a signalling connection between a connection formation system in the connection network and at least the client to be billed, the signalling connection being separate from the mutual data communications connection;

setting a traffic limiter in the connection network for the mutual data communications connection based on at least one of the header-field properties of the packets being transmitted;

monitoring the data communications connection individually for a session which is

actively being transmitted over the mutual data communications connection between the at least two clients, the data communications connection being monitored for data communications services being provided to the client to be billed;

controlling the billing to be charged in a billing system session-specifically for the data communications connection based on the monitored data communications services;

receiving state data at the connection-formation system from the billing system over the message connection concerning an absence or a deficiency of a payment required in the billing system for providing the session being transmitted over the mutual data communications connection;

in response to the state data received from the billing system, instructing the traffic limiter to break, interrupt, or close the session over the mutual data communications connection; and

setting a two-way signalling link between the connection-formation system and the billing system through the mediator.

25. (New) A method according to Claim 24, wherein:

each session is monitored and billed for using the connection-formation system by responding to a message sent from the billing system concerning the lack or deficiency of a payment allocated to the session,

in response to the message, the connection-formation system is used to:

direct a message to the billing system to limit the session-specific billing, and

instruct the traffic limiter to close or interrupt the session or the mutual data communication connection through the connection network between the at least two clients.

26. (New) A system for limiting the use of a data communications connection subject to payment between IP clients in a packet-switched connection network, comprising:

a device configured as a connection-formation system for setting a mutual data communications connection between at least two clients through the connection network, and for setting a mutual signalling connection separate from the mutual data communications

connection;

a device configured as a mediator for monitoring the data communications connection individually for a session which is actively being transmitted over the data communications connection for data communications services provided to the clients, and controlling billing for the data communications connection to be charged session-specifically based on the monitored data communications services;

a device configured as a traffic limiter based on the properties of the header fields of the packets being transmitted for the mutual data communications connection; and

a traffic relaying system including a network for transmitting at least one session over the mutual data communications connection,

wherein the connection-formation system is configured to:

receive state data from the billing system via a message connection concerning a lack or deficiency of payment required by the billing system for the provision of the session being transmitted over the mutual data communications connection,

instruct the traffic limiter to break or interrupt a session over the mutual data communications connection in response to the state data received from the billing system, and

set a two-way signalling link between the connection-formation system and a billing system through the mediator.

27. (New) A system according to Claim 26, wherein the connection-formation system is configured to:

receive a message sent from the billing system in response to the insufficiency or smallness of a payment directed to the session,

direct a message for limiting session-specific billing to the billing system in response to the received message, and

instruct the traffic limiter to close or interrupt the session or mutual data communications connection through the connection network between the at least two clients in response to the received message.